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NAS SOUTH WEYMOUTH
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MEMORANDUM EMERGENCY REMOVAL ACTION COMPLETION REPORT FOR THE FORMER SEWAGE TREATMENT PLANT OPERABLE UNIT 7 (OU 7) FORMER NAS SOUTH WEYMOUTH MA

08/12/2015

U S EPA REGION I BOSTON MA

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MA. 02109-3812

MEMORANDUM

Date: August 12, 2015

Subject: Emergency Removal Action Completion Report
For the Former Sewage Treatment Plant (OU7)
Former Naval Air Station (NAS) – South Weymouth
Weymouth, Massachusetts - CERCLIS ID#: MA2170022022

From: Carol A. Keating, RPM (CAK)
OSRR, Federal Facilities Superfund Section

Thru: Dave Barney, BRAC Environmental Coordinator
BRAC PMO East, US Navy

Lynne Jennings, Chief
OSRR, Federal Facilities Superfund Section

To: Beth Deabay, Acting Chief
OSRR, R&R II Branch

I. PURPOSE

The purpose of this memorandum is to document the completion of the emergency removal action described herein for the Former Sewage Treatment Plant (STP), Operable Unit 7/Site 7 (the Site) at the former Naval Air Station (NAS) South Weymouth, Massachusetts (the Base). The removal action discussed herein was initiated on January 6, 2015, pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), Section 104, and 40 CFR Part 300, "National Oil and Hazardous Substances Pollution Contingency Plan" (NCP) and Section XVIII of the Federal Facilities Agreement (FFA), to mitigate unacceptable risks to human health and the environment posed by the discovery of elemental mercury during ongoing remedial activities (i.e., soil and pipe excavation) being performed at the site.

II. SITE CONDITIONS AND BACKGROUND

A. Physical Location and Description

The former NAS South Weymouth is comprised of approximately 1,442 acres located approximately 20 miles southeast of Boston. The Base is located primarily in the Town of Weymouth, Norfolk County, Massachusetts. Portions of the Base also extend into the adjacent Towns of Abington and Rockland, Massachusetts; the town of Hingham forms the northeastern boundary of the Base. The Base is located in an urban area, with primary access from Route 18 in Weymouth. The base location is shown on Figure 1.

NAS South Weymouth was commissioned during the 1940s to support dirigible aircraft used to patrol the North Atlantic during World War II. The facility was closed in 1949 and then reopened in 1953 as a naval air station for aviation training. NAS South Weymouth was designated for closure under the Base Realignment and Closure Act of 1990 (BRAC), as part of the BRAC Commission's 1995 Base Closure List. In September 1996, operational closure of NAS South Weymouth began with the transfer of aircraft to other Navy facilities, and through personnel reduction. Between 1996 and 1997, NAS South Weymouth provided facilities for limited ground training to Marine and Naval reserve units (EA, 1998). NAS South Weymouth was closed administratively under BRAC on September 30, 1997. Because of the closure, the facility was placed in caretaker status under the supervision of the NAVFAC and is currently under the supervision of the NAVFAC BRAC Program Management Office PMO East. Portions of the Base property have been transferred by the Navy to the local redevelopment authority and are undergoing redevelopment.

The former STP presented on Figure 2, is comprised of two main areas encompassing approximately 3.3 acres: the former Tile Bed Area and the adjacent former sewage treatment plant area. The Site is unpaved and relatively flat with a gentle slope to the west, toward an adjacent drainage channel and wetland area. A small segment of the adjacent, downgradient/downstream wetland area is also included as part of the Site. The Site's ground surface is covered by grasses, shrubs, and mixed upland forest. A forested wetland, which contains several small intermittent stream channels, bounds the Site to the west. Forested areas bound the Site to the north, whereas paved roads bound the Site to the east and south.
The Tile Bed Area was part of the original wastewater treatment system installed in the 1940s during construction of the Base. The Tile Bed Area was the leaching field for the treatment system.

The wastewater from the Base, mainly comprised of wash water from sink and shower drains, restrooms, and sanitary sewer inlets, received primary treatment at Building 7, the Sewage Lift Station, located south of the Site near Hangar 1. The partially-treated wastewater was piped from the Sewage Lift Station to the subsurface gravel layer in the Tile Bed Area for final treatment (i.e., filtration and biodegradation) and disposal (i.e., infiltration to groundwater). Building 7 and the Tile Bed Area were used by the Navy from approximately 1940 to 1941 until sometime later a settling tank and trickling filter (southernmost) was added.

In 1953, the Navy expanded the STP facility adjacent (north) of the Tile Bed Area. Use of the Tile Bed Area was discontinued and the STP was used as the wastewater treatment facility for the Base from 1953 to 1978. The STP initially consisted of a settling tank for primary (physical) treatment and a "trickling filter" for secondary (biological) treatment of wastewater. The treated wastewater was discharged through an outfall to a drainage ditch leading west. During the plant's 25 years of operation, the Navy completed various upgrades, including expansion of the secondary treatment system and construction of covered sludge drying beds for aerobic digestion (composting) of the wastewater sludge. Dried sludge from the drying beds was reportedly disposed at various remote locations on the west side of the Base, primarily north of Trotter Road. In 1978, the Navy decommissioned the STP and the Base wastewater was discharged to the municipal sanitary sewer system. From the 1980s until 2005, the covered sludge drying bed area was used by Navy for storage of road salt and sand. A more complete description of the STP can be found in Chapter 3 of the Remedial Investigation (RI) Phase II Report (TtNUS, 2002).

The Navy removed the above-grade portions of tanks and associated structures of the STP Site in 1992. Structures that remain on the Site include the digesters, primary and secondary settling tank foundations, and concrete walls of the former sludge drying bed area, an inactive transformer (polychlorinated biphenyls [PCB]-free), the clay tiles and riser pipes of the former Tile Bed Area, and the various groundwater monitoring wells installed as part of the Navy's investigations of the Site.

B. Background

Preliminary Assessment (PA), Argonne National Laboratory 1988. A PA, consisting of a records search, interviews, and a site walkover, was conducted under the Department of Defense's Installation Restoration Program (IRP). The purposes of the PA were to identify and evaluate past waste practices at NAS South Weymouth and make an assessment of the associated potential for environmental contamination. As a result of the study, five sites (not including the STP site) were identified for further environmental study.

Site Investigation (SI), Baker Environmental December 1991. The Navy completed a SI that included site walkovers, geophysical surveys, installation of groundwater monitoring wells, and the collection of soil, sediment, surface water, and groundwater samples at eight sites at the NAS South Weymouth property. The SI was conducted for screening purposes to assess the potential for contaminant migration, provide data for Hazard Ranking System (HRS) scoring, and to provide the information necessary to develop a comprehensive work plan for further study. The SI included a site visit and literature review at the STP site, but no sampling. Further investigation of the STP site was recommended.

National Priorities List 1994 – The South Weymouth NAS was placed on the National Priorities List (NPL), on May 31, 1994, 59 Fed. Reg. 27989.

Phase I RI Study, Brown & Root Environmental 1998. The Navy issued a Final Phase I RI Report in July 1998. The Phase I RI addressed contamination at seven sites and included a literature search, a geophysical survey; a soil-vapor survey; immunoassay testing; an ecological assessment; test pit excavation; installation of monitoring wells, well points, and piezometers; hydraulic conductivity testing; groundwater gauging and water level measurements; stream gauging; sampling of surface soil, subsurface soil, groundwater, sediment, surface water, and leachate; and a human health risk assessment.

Federal Facilities Agreement 1999 - Agreement entered into by the U.S. EPA-New England Region (EPA) and the U.S. Department of the Navy (Navy) for activities to be conducted under CERCLA Sections 104, 120 and 122 (as amended by the Superfund Amendments and Reauthorization Action of 1986 (SARA), Pub. L. No. 99-499)), and 42 U.S.C. Sections 9604, 9620(3)(1) and 9622, Resource Conservation and Recovery Act (RCRA) (as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) and Executive Order 12580.

Phase II RI, Tetra Tech NUS (TtNUS) 2002. The Phase II RI was conducted to address data gaps from the previous investigations. During the Phase II RI, the Tile Bed Area was incorporated into the sampling and investigation programs along with the STP area. The Phase II RI included further ecological assessment; groundwater gauging; water level measurements; sampling of surface soil, subsurface soil, groundwater, sediment, and surface water; and a human health risk assessment.

Supplemental Sampling Event and Risk Assessment Addendum, TtNUS 2006. The additional field investigation and associated risk calculations included sampling and analysis of soil beneath the former sludge drying beds and groundwater and calculating risk to evaluate the potential risks to future residents from exposure to site surface soils. This supplemental field investigation and additional risk calculations were incorporated into the Final Feasibility Study (TtNUS 2007).

Feasibility Study (FS), TtNUS 2007. The FS identified the RAOs that would be protective of human health and the environment at the site, and developed and evaluated various cleanup alternatives to achieve those objectives.

Record of Decision (ROD), US Navy April 2008. The ROD was executed on April 30, 2008 and selects excavation and off-site disposal (or recycling by asphalt batching) of contaminated soils and sediments.

Pre-Design Investigation (PDI), LFR 2009. The PDI was conducted to further delineate the types and extent of contaminants of concern in soil and sediment requiring remediation, to verify that surface water is not a medium of concern, to evaluate groundwater flow and to inspect and determine whether there are potential migration pathways that have not been adequately investigated.

Remedial Action (RA), TetraTech, EC (TtEC) 2009. The RA was commenced to reduce the levels of the contaminants of concern in surface soil and sediment to below the RGs per the selected remedy identified in the ROD (Navy 2008). Following removal of the impacted material, confirmatory samples were collected to document the remaining levels of the contaminants of concern. Several post-excavation investigations have been conducted to assess the extent of contamination remaining at the Site.

Supplemental PDI, TtNUS 2012. A supplemental PDI effort and report was completed between April 2011 and September 2012. During this effort, additional sampling was performed to further delineate the lateral and vertical extent of soil contamination. Soil samples from each of the pipes and at the headwall were also collected. Based on the investigative findings, new site-specific preliminary remediation goals (PRGs) were calculated for the contaminants of concern that contribute significantly to the cancer risk for each receptor exposed to media onsite. A comparison of the data to the PRGs demonstrated that the remaining contamination posed a potential health impact, sufficient to conduct additional soil sampling.

Additional Soil Delineation Investigation, TtNUS 2014. In 2013, an Additional Soil Delineation investigation was performed to follow up on the 2009 RA and the 2011 Supplemental PDI results, which showed areas that needed further investigation. The investigation and report were completed between July 2013 and February 2014. Sample results indicated that contaminants of concern remained. The contaminants of concern for soil included arsenic, 4,4'-DDT, dieldrin, benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene. The contaminants of concern for sediment included arsenic, 4,4'-DDD, 4,4'-DDE, 4,4'- DDT, and dieldrin. An evaluation of prior remedial actions at STP Site 7 led to the determination that additional surface and subsurface contamination were present and that additional surface soils, discharge piping (and piping content), and associated contaminated soil and sediment needed to be removed to meet the RAOs for the site identified in the ROD (Navy 2008), allowing unrestricted land use following implementation of the remedy.

Second, Five-Year Review, 2014 - The 2014 Five Year Review (2014 TtNUS) revealed remaining PAH, arsenic, pesticides, and PCBs contamination in subsurface soils above post-ROD PRGs that posed potential health impacts for a hypothetical resident or industrial worker due to the remaining impacted subsurface soil. Due to these potential human health impacts, additional actions such as excavation, implementation of institutional controls, confirmation sampling, and long term monitoring (LTM) were recommended for soil. The 2014 Five-Year Review also identified remaining sediment impacted with COCs exceeding the ROD-specified RGs, prompting additional sediment excavation as part of recent remedial activities.

Test Pit Report, TtEC 2014a. A test pit investigation was completed to investigate former STP structures. The investigation targeted piping, connections, vaults, trickling filters, and tanks of the former sewage treatment system. The investigation identified impacted piping and structures with elevated concentrations of arsenic and polycyclic aromatic hydrocarbon (PAHs).

Additional RA, TtEC 2015. The Navy is completing an additional phase of remediation that includes additional excavation of impacted surface soil, unsaturated subsurface soil, structures, piping, and sediment. The scope of this effort was detailed in the "Final Addendum to Remedial Action Work Plan, Soil Excavation at Site 7 Former STP Location" (TtEC 2014b) and included removal of surface soil impacted COCs at concentrations above PRGs. This work will be summarized in a forthcoming RACR.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

The discovery of elemental mercury, during the performance of CERCLA remedial activities at the STP, constituted a threat to public health, welfare or the environment based upon the factors set forth in 40 C.F.R. § 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan ("NCP"). In addition to being a CERCLA-listed hazardous substance, mercury is regulated as a Priority Toxic Pollutant in 40 CFR 401.15, Section 307(a) of the Clean Water Act, and a Hazardous Air Pollutant in 40 CFR 60.60-63, Section 112 of the Clean Air Act.

The threats included, but may not have been limited to, the following:

A. Actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances or pollutants or contaminants

Elemental mercury is a heavy, shiny, silver-white, odorless liquid. It is nonflammable, but releases toxic vapor, especially when heated. Although this form of mercury is not readily absorbed into the human body by touch or through the digestive tract, the inhalation of airborne vapors can be extremely harmful if improperly handled or not immediately contained.

Inhalation of mercury vapor is the primary route of exposure to elemental mercury. The vapor is highly toxic, is almost completely absorbed (80%) by the lungs, and can cause life-threatening chemical pneumonitis and respiratory failure. Neither liquid mercury nor mercury vapor has an odor and thus, chemical odor provides no warning of hazardous concentrations. Symptoms of acute inhalation exposure to elemental mercury vapor occur within hours of the exposure and consist of coughs, chills, fever, and shortness of breath. Symptoms might resolve or gradually

progress to chemical pneumonitis, adult respiratory distress syndrome (ARDS), respiratory failure, renal failure, nausea, vomiting, and diarrhea. Exposure may also result in visual disturbances and CNS damage. Mercury vapor is heavier than air and may therefore accumulate in poorly ventilated or low-lying areas.

According to reports published by the Agency for Toxic Substances and Disease Registry (ATSDR) (see Figure 4 - 'Mercury Quick Facts"), the nervous system is especially sensitive to mercury exposure. Exposure to very high levels of mercury vapor can cause brain, kidney, and lung damage and may seriously harm a developing fetus. Exposure to mercury vapor concentrations high enough to produce such serious effects might also cause coughing, chest pains, nausea, vomiting, diarrhea, increases in blood pressure or heart rate, skin rashes, and eye irritation. Exposure to lower levels of airborne mercury for prolonged periods of time would produce more subtle effects, such as irritability, sleep disturbances, excessive shyness, tremors, coordination problems, changes in vision or hearing, and memory problems. Most of the effects of mercury resulting from prolonged lower level exposure are reversible, once exposure is terminated and the mercury has left your body. No human data indicate that exposure to any form of mercury causes cancer, but the human data currently available are very limited.

The discovery of elemental mercury, a hazardous substance as defined by Section 101(14) of CERCLA, prompted implementation of the emergency response action described in this report. Elemental mercury, impacted soils, and associated debris, were safely and promptly characterized, containerized and removed from the site, significantly minimizing and/or eliminating, actual or potential risks to nearby populations, animals, or the food chain

B. Actual or potential contamination of drinking water supplies or sensitive Ecosystems

Mercury in the air may settle into water bodies and affect water quality. Mercury associated with soils can be directly washed into surface waters during rain events. Surface runoff is an important mechanism for transporting mercury from soil into surface waters, particularly for soils with high humic content. However, since metallic mercury tends to quickly evaporate to the atmosphere, whereas solid forms partition to particulates in the soil or water column, they do not readily migrate downward in the water column to the sediments.

Fortunately, the prompt implementation of an emergency response action plan, to safely and promptly containerize and remove the mercury and associated contaminated soils and structural debris from the site, significantly minimized potential risks to drinking water supplies or sensitive ecosystems.

IV. ENDANGERMENT DETERMINATION

Although the actual concentration of mercury was not determined prior to its removal, based on the known chemical composition and toxic characteristics of elemental mercury and the potential exposure pathways described above, the elemental mercury discovered on site posed an imminent and potentially substantial risk to public health, or welfare, or the environment, if not addressed by implementing the response actions described herein.

V. ACTIONS CONDUCTED AND COSTS

A. Description of the Action Conducted

On January 6, 2015, during the removal of stone and sediment from the North Trickling Filter (see Figure 3 for location) at the former Sewage Treatment Plant (STP), a small amount of mercury was discovered adjacent to the center horizontal concrete column (at the base of the spindle). Excavation operations ceased and, in accordance with CERCLA and MassDEP procedures, the site was secured (to prevent further release to the environment and abate the potential imminent and substantial endangerment posed by the mercury discovery) and Dave Barney, the Navy's BRAC Environmental Coordinator (BEC) was notified. Within minutes, Mr. Barney arrived at the site and determined that an emergency removal action was warranted to address the release. As required in Paragraph 18.4 of the FFA, the Mr. Barney immediately notified the EPA and MassDEP of the discovery and discussed preliminary plans to remove the mercury and assess the surrounding site conditions. Upon receiving verbal concurrence from EPA and MassDEP, an emergency mercury response plan was developed for immediate implementation. A field change request was issued by Tetra Tech Ec, Inc. (TtEC) (the Navy's primary remedial action contractor), on January 8, 2015, for the acquisition of a specialty, sub-contractor to respond to the mercury release. A hazardous waste response team from Global Remediation Services, Inc. ("Global"), located in Taunton, MA, arrived on site the morning of January 13, 2015, and after a health and safety briefing and establishment of work and decon zones, commenced removal activities. (See "Appendix I – North Trickling Filter Mercury Response Documentation" (from the recently released July 2015, draft "STP Remedial Action Completion Report").

A small amount of mercury (< 1 tablespoon) and residual soil was recovered using a mercury vacuum and containerized in an 8-ounce jar. Upon further inspection of the area, a small amount of soil containing mercury was also discovered at the base of the former trickling filter spindle. The spindle was carefully demolished and mercury-contaminated soil and filter media were removed and placed in two, 55-gallon drums, along with mercury, PPE, vacuum filters, decon equipment and previously recovered, mercury-contaminated soil and debris. The drums were sealed, labeled and properly secured on site pending results of the confirmatory samples from spindle debris and the base of the excavation. Sample results subsequently confirmed that the release was contained to the filter floor and was not detected in surrounding soil samples.

Upon receiving confirmation that mercury release had been successfully addressed, the hazardous waste containers, holding approximately 8 ounces of mercury and 12,001 pounds of mercury-contaminated soil and debris, were removed from the site on February 11, 2015 and transported to Veolia ES Technical Solutions LLC, a licensed disposal facility in Port Washington, WI. (See attached Appendix I for copies of the hazardous waste manifest and Certificate of Waste Acceptance.) The remaining floor of the trickling filter was cleaned, covered in plastic, and secured by fencing until remediation activities could be resumed in the area.

The total cost for this removal action, as incurred and reported by the Navy, was approximately $49,000.

B. Contribution to Remedial Performance

After the discovery of mercury at the North Trickling Filter, demolition and excavation activities at the South Trickling Filter were closely monitored, prior to and throughout, completion of the required CERCLA remedial action. Fortunately, there was no mercury encountered at the South trickling filter or in associated debris or underlying stone and sediment. Based on observations made in the field and upon review of facility drawings, it was later determined that since the south tricking filter was designed differently than the older North Trickling Filter, it likely wouldn't contain mercury. As a precautionary measure, however, (and to confirm the localized extent of the NTF release), total mercury was added to confirmatory sampling for the downgradient ditch and pipe excavations as part of the ongoing CERCLA remediation of the site.

Upon completion of all site remediation activities, the North and South Trickling Filters, North and South Primary Tanks, and Chambers B and C were backfilled to grade with gravel borrow. Eighteen inches of fill and six inches of top soil was placed above the gravel borrow, providing a two-feet cover above the former structures.

Pursuant to Paragraph 18.4 of the FFA, because the action was in the nature of an emergency removal action for reasons previously discussed, it was impracticable for the Navy to produce written documentation (i.e. removal action work plan, EE/CA, etc.) for regulatory review and comment prior to commencement of field activities. Shortly after implementation of the response plan, however, the Navy provided EPA and the State a written basis for the action, with details of how the planned response would abate the danger and threat posed by the release. This material was recently supplemented with a summary of confirmatory sampling data and more detailed description of the removal action, documenting its compliance with CERCLA and the NCP and explaining how, to the extent practicable, it contributed to the efficient performance of the remedial action set forth in the 2008 ROD.

C. Applicable or Relevant and Appropriate Requirements

To the extent practicable, all applicable or relevant and appropriate requirements ("ARARs") were complied with. In addition, all site-related debris and contaminated media were disposed of in compliance with the U.S. EPA Off-Site Rule 40 C.F.R. Section 300.440.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

The discovery of elemental mercury during performance of CERCLA remedial activities at the site, posed actual and potential risks to public health and the environment that, if response actions were delayed or not taken, would have increased the likelihood that human and/or wildlife populations would have been to be exposed by inhalation, direct contact, inhalation and/or ingestion.

VII. ENFORCEMENT

For reasons previously discussed, the Navy was unable to provide written documentation (i.e. removal action work plan, EE/CA, etc.) for regulatory review and comment prior to commencement of the response action, given the emergency nature of the required action. However, throughout implementation of the response action, the Navy successfully fulfilled all of the requirements for the performance of an emergency removal action, as set forth in Paragraph 18.4 of the FFA. More recently, the Navy provided a summary of confirmatory sampling data and a more detailed description of the removal action, documenting its compliance with CERCLA and the NCP, for regulatory review and concurrence.

VIII. RECOMMENDATION

This memorandum documents the completed emergency response action for the Sewage Treatment Plant (STP) at the former South Weymouth Naval Air Station – South Weymouth. It was developed in accordance with CERCLA as amended, and is consistent with the NCP. I recommend your approval of the completed removal action. You may indicate your decision by signing below.

APPROVE: Beth Deabay DATE: 8/24/15

Beth Deabay, Acting Chief
Remediation and Restoration II Branch
OSRR – Region 1

DISAPPROVE: _____ DATE: _____

Beth Deabay, Acting Chief
Remediation and Restoration II Branch
OSRR – Region 1

FIGURE 1 – SITE MAP

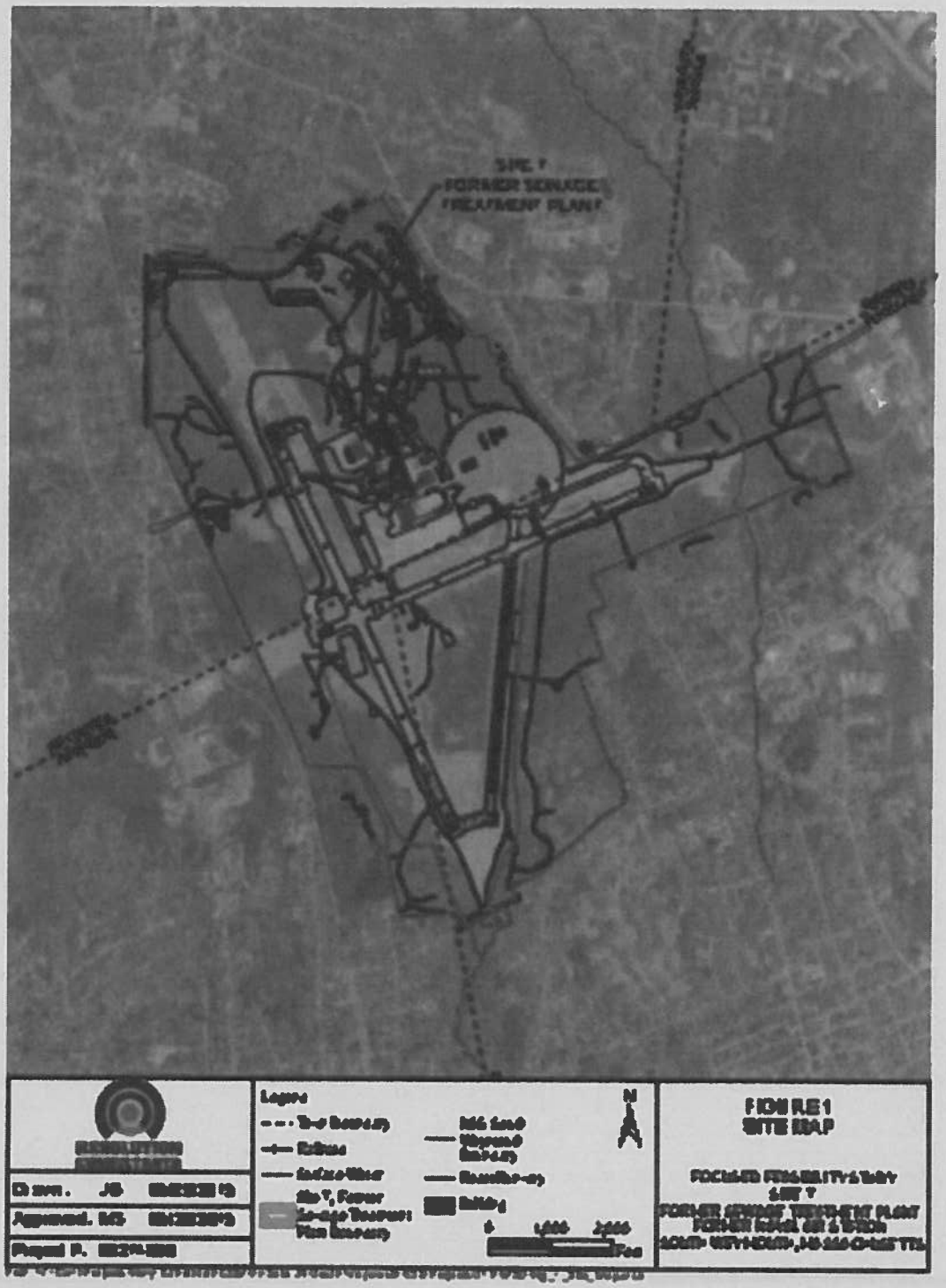

FIGURE 2 – SITE LAYOUT

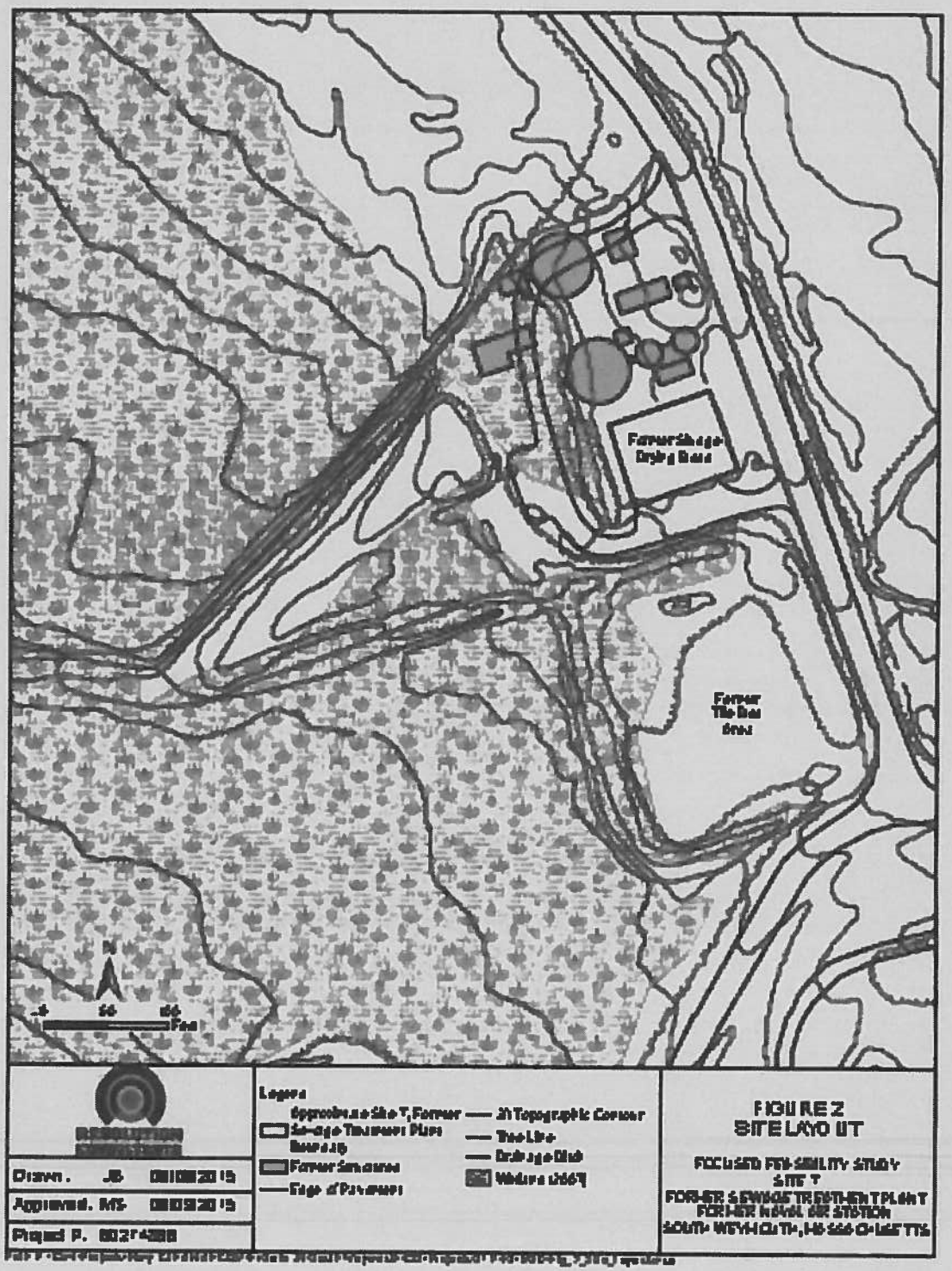

FIGURE 3 – STP REMEDIATION MAP

LOCATION OF NORTH AND SOUTH TRICKLING FILTERS

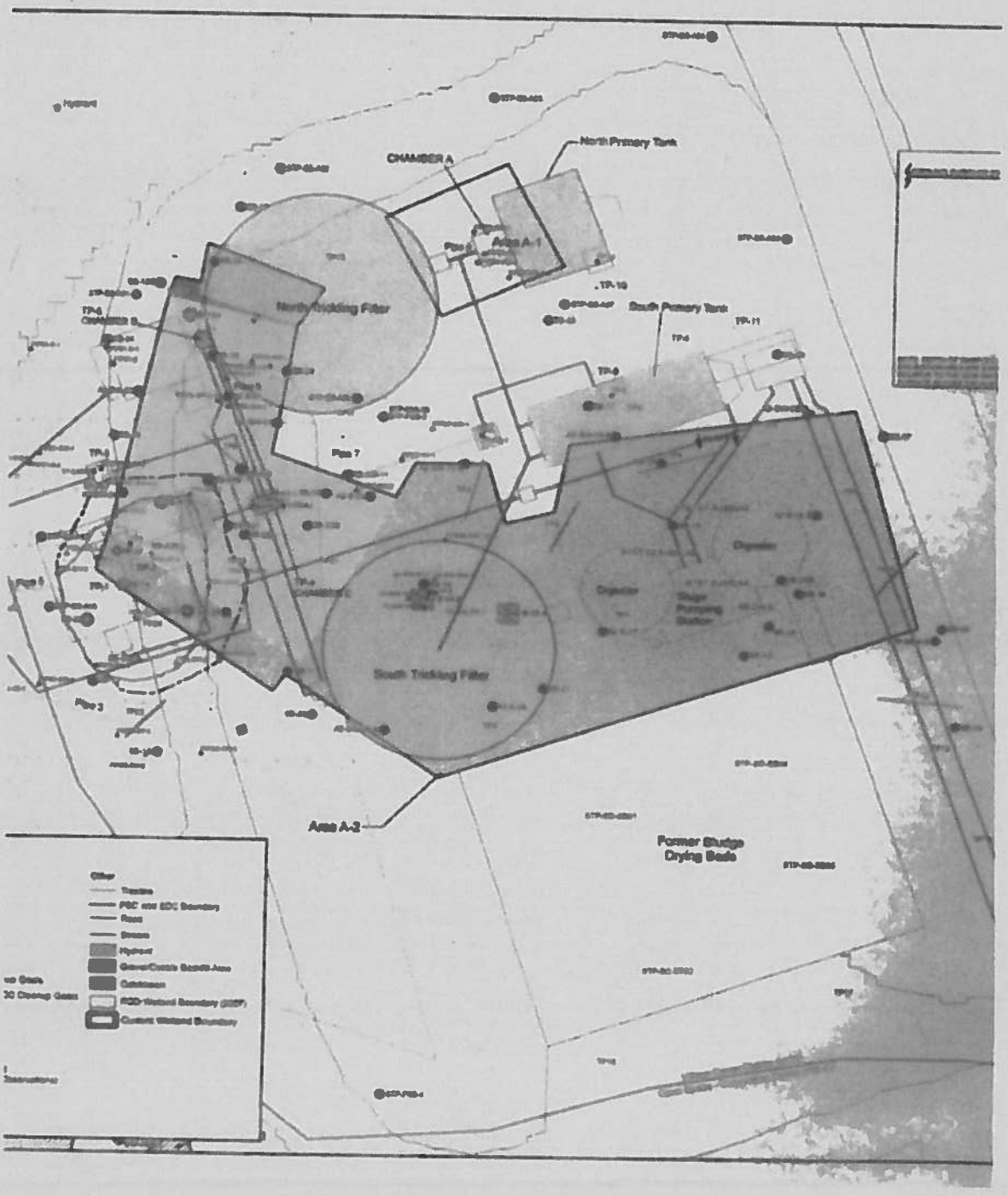

FIGURE 4

Mercury Quick Facts
Health Effects of Mercury Exposure

What is Elemental Mercury?

Elemental (metallic) mercury is the shiny, silver-gray metal found in thermometers, barometers, and thermostats and other electrical switches.

- Mercury can break into droplets when spilled. The droplets spread easily and can build up in tiny cracks and spaces in your house.
- Mercury can vaporize (evaporate) into the air in your house. The vapor cannot be seen or smelled.
- Mercury can be toxic to people's nervous system, lungs and kidneys.

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- Can be toxic to people's nervous system, lungs and kidneys.

Mercury vapor is heavier than air and tends to remain near the floor or area where the spill happened. It can build up in poorly ventilated or low-lying areas in your house.

How can I be exposed to elemental mercury in my home?

People can be exposed to elemental mercury when household items that contain mercury are broken. Elemental mercury can also be brought into your house from abandoned industrial sites and other places. Breathing mercury vapors in air is the most

How much mercury spilled in a room will make air in the room unsafe?

Any amount of mercury spilled indoors can be hazardous. The more mercury is spilled, the more its vapor will build up in air and the more hazardous it will be. Even a small spill, such as from a broken thermometer, can produce hazardous amounts of vapor if a room is small enough, warm enough and people spend a good deal of time there, as in a small bedroom.

Add your message here.

ATSDR

Updated June 2012

CS229817-A

What are the Health Effects of Mercury Exposure?

The health effects that can be caused by breathing mercury depend on how much mercury vapor you breathe and how long you breathe the vapors. Health problems can result from short-term or long-term mercury exposure.

Who is most likely to have health problems after breathing mercury vapors?

The following groups of people are particularly sensitive to the harmful effects of mercury:

- **Pregnant women - Mercury can pass from a mother's body to her developing fetus.**
- **Infants - Mercury can also be passed to nursing infants through breast milk.**
- **Young children - They tend to play on floors where mercury may have been spilled, and are more likely to breathe more vapors than an adult because they breathe faster and have smaller lungs.**

Health effects caused by long-term exposure to mercury vapors	Health effects caused by short-term exposure to high levels of mercury vapors
• Anxiety	• Cough, sore throat
• Excessive shyness	• Shortness of breath
• Anorexia	• Chest pain
• Sleeping problems	• Nausea, vomiting, diarrhea
• Loss of appetite	• Increase in blood pressure or heart rate
• Irritability	• A metallic taste in the mouth
• Fatigue	• Eye irritation
• Forgetfulness	• Headache
• Tremors	• Vision Problems
• Changes in vision	
• Changes in hearing	

What tests are available for elemental mercury exposure?

Urine or blood samples can be tested to see if you have been exposed to too much mercury. A urine test is preferred for measuring elemental mercury. Urine samples may be collected over a 24-hour period, or taken once (preferably in the morning after awakening). A blood test can be used to measure exposure to high levels of mercury if you can be tested within three days of being exposed.

If a test shows you have mercury poisoning (too much mercury in your body), your doctor can give you drugs that will remove the mercury from your body.

Call the Poison Control Center toll-free, 1-800-222-1222, if you or your doctor need help understanding your test results.

- If more than two tablespoons of mercury are spilled, it is mandatory to call the National Response Center (NRC), available 24 hours a day, 1-800-424-8802.
- If you have health-related questions about mercury, call the Agency for Toxic Substances and Disease Registry (ATSDR) at 800-232-4636 or TTY: 888-232-6348, or by email to cdcinfo@cdc.gov.
- If you have questions about cleaning up a mercury spill of any size, call US EPA at 202-564-3850.

DOCUMENTATION FROM

APPENDIX I

DRAFT REMEDIAL ACTION COMPLETION REPORT

AOC 7 – FORMER SEWAGE TREATMENT PLANT

JULY 2015

NORTH TRICKLING FILTER MERCURY RESPONSE ACTION

APPENDIX I

NORTH TRICKLING FILTER MERCURY RESPONSE DOCUMENTATION

TETRA TECH EC, INC.
NAVY REMEDIAL ACTION CONTRACT
CONTRACT NO. N62470-13-D8007

FIELD CHANGE REQUEST (FCR)

TASK ORDER # WE02 FCR # 6 DATE 4/8/2015

LOCATION: NAS South Weymouth MA ROICC / RPM Robert Krivinskas

1. Document to be changed. Identify revision, date, section, drawing, etc.

Final Addendum to Remedial Action Work Plan Soil Excavation at Site 7 Former STP Location Former Naval Air Station South Weymouth, Massachusetts: Revision 0; 7/24/14 FCR #5

2. Description of existing requirement and proposed change (Attach sheet if necessary)

North Trickling Filter:

1. A specialist sub contractor will provide the labor, equipment, and materials to remove the remaining mercury, at the base of the concrete center column, utilizing a mercury removal specific vacuum.
2. Upon successful inspection, TtEC will remove the concrete center column and stockpile it separately on poly sheeting and cover. TtEC will break through and remove the concrete directly under the concrete center column. This concrete will also be stockpiled with the column material. The concrete thickness on this part of the foundation is shown to be 1' 4" on site rehabilitation drawings.
3. TtEC will collect one grab sample (0-6" depth) of the soil beneath the concrete center column pad and analyze for total Hg only.
4. In order to reach/remove the concrete center column to break/remove the bottom pad, the trickling filter will need to be partially backfilled in order to gain access. So TtEC will add some clean fill to this filter in order to accomplish the above.
5. The northern trickling filter will remain partially open (with fencing) until a next plan is developed based on results.
6. Will develop a plan to address the concrete waste based on the results of the sample/discussion.

South Trickling Filter:

1. TtEC will remove some of the clean backfill and hammer/remove the concrete center column similar fashion to the North trickling Filter while inspection from the presents of mercury. The services for the specialize sub contractor will be made available so in the event that mercury is discovered so that clean up could be coordinated in a timely manner.

3. Reason for Change (Attach sheet if necessary)

On 4/6/15 a small amount of mercury was discovered adjacent to center column within the north trickling filter. A plan was developed to recover the incidental mercury this was completed and generated a very small amount containerized in an 8oz glass jar following Navy direction Tetra Tech demolished the hollow cylindrical concrete column, More mercury was discovered at the base of the column. A gross clean up of the mercury mixed with the trickling filter media generated 1 and 1/2 drums of waste. To complete the clean up process specialized tools are required such as a mercury vacuum to collect the small amount remaining within the rough surface of the concrete floor directly below the column. This area is roughly 4' in diameter. Due to this discovery we are receiving Navy direction to complete the same investigation at the southern filter

4. Originator: (print name and sign) Richard Claydon		**Title** Field Operations Lead (ESS/QC)	**Date** 1/8/15/2014
Reviewed by: (print name and sign).		**Title**	**Date**
Site Superintendent (Print name and sign). Jon Cary	**Date** 1/9/15	**Task Order Manager (Print name and sign)** Brian Corbett	**Date** 1/9/2015
TtEC Program HS Manager (Print Name and Sign) Roger Margotto	**Date** 1/9/2015	**NTR Acknowledgement (Print name and sign)**	**Date**

Activity Hazard Analysis (AHA) #14

ACTIVITY/WORK TASK:	Mercury Cleanup	Overall Risk Assessment Code (RAC) (Use highest code)	M
	SIGNATURES	Activity #	AHA # 14
PWD/OICC/ROICC OFFICE			
NAME & DATE ACCEPTED BY GDA:			
CONTRACT NUMBER:	N62470-13-D8007		
TASK ORDER/DELIVERY #:	WE02		
PRIME CONTRACTOR:	Tetra Tech EC		
SUBCONTRACTOR:	Global Remediation Services, Inc.		
DATE OF PREPARATORY MEETING:			
DATE OF INITIAL INSPECTION:			
CONTRACTOR COMPETENT PERSON:	Richard Claydon (TTEC) Matthew Phelps (Global)		
SITE SAFETY and HEALTH OFFICER	Richard Claydon (TTEC)		

Risk Assessment Code (RAC) Matrix

Severity	Probability				
	Frequent	Likely	Occasional	Seldom	Unlikely
Catastrophic	E	E	H	H	M
Critical	E	H	H	M	
Marginal	H	M	M		
Negligible	M				

ACCEPTANCE BY GOVERNMENT DESIGNATED AUTHORITY (GDA)	
E = EXTREMELY HIGH (PWD/OICC/ROICC)	
H = HIGH RISK (FEAD DIRECTOR)	
M = MODERATE RISK (CM or ET or PAR)	

Review each "Hazard" with identified safety "Controls" and determine (RAC)

Identify the RAC (Probability/Severity) as E, H, M, or L for each "Hazard". Place the highest RAC at the top of AHA. This is the overall risk assessment code for this activity

"Severity" is the outcome/degree if an incident, near miss, or accident did occur and identified as: Catastrophic, Critical, Marginal, or Negligible after controls are in place

"Probability" is the likelihood to cause an incident, near miss, or accident did occur and identified as: Frequent, Likely, Occasional, Seldom, or Unlikely after controls are put in place.

AHA # 14 Mercury Cleanup

Job Steps	Hazards	Controls	RAC
1. Inspect Generator	Defective switches, equipment oil/fuel, defective fuel lines, defective electrical cords, defective GFI.	Perform inspection prior to starting the generator. Follow manufacturers operating manual for inspections. Ensure all safety components are in place and in good working order. Ensure engine components/connections are in good condition. GFI and electrical cords are in good condition and free from cuts or damaged connection points.	L
2. Inspect Mercury Vacuum	Defective clamps/seals/suction line, improper filters, defective or damages electrical components.	Perform inspection prior to energizing the vacuum. Follow manufacturers operating manual for inspections. Ensure all clamps/seals/suction lines are in place and in good working order. Ensure the proper filters are installed and in good working order. Ensure the electrical line is in good condition and free from cuts or damaged connection points.	L

AHA # 14 Mercury Cleanup			
Job Steps	**Hazards**	**Controls**	**RAC**
3. Inspect area where Mercury cleanup operations will be performed.	Potential fire or explosion hazards. Spills of fuel to ground and environment. Exposure of worker to chemical/metal hazards. Spreading contamination around the site. Slips trips and falls on uneven surfaces.	No combustible material in the area. No smoking or other spark or heat producing activities in area of the generator. No work will start until fire extinguishers and fire watch in place. Install protective measures or keep a safe distance from the contaminated area during inspection activities. Ensure proper footing and proceed slowly when moving around the site.	M
4. Don Level C PPE consisting of yellow Tyvek, chemical resistant gloves, disposable rubber boots, full face respirator w/ combo cartridges. All seams will be taped with duct tape.	Improper PPE could cause worker to be exposed to chemicals/metal hazards.	Inspect and wear specified Level C PPE.	M
5. Perform mercury cleanup operations following accepted practices.	Failure to follow the EPA's Metallic Mercury Spill Response Guide and equipment manufacturer's requirements could cause exposure to employees and/or spreading contamination on the site.	Only qualified and trained personnel may perform the mercury cleanup operations. Follow EPA/manufacturer's requirements and operating procedures.	M
6. Mercury and impacted debris storage and decontamination process.	Failure to follow the EPA's Metallic Mercury Spill Response Guide, equipment manufacturer's requirements, and decontamination protocols could cause exposure to employees, spreading contamination, and/or improperly containerizing the waste.	Only qualified and trained personnel may perform the mercury cleanup operations. Follow EPA/manufacturer's requirements and operating procedures. The Mercury, PPE, vacuum filters, and other debris shall be placed into 55 gal steel drums and sealed/labeled. Used standard doffing procedures when removing Level C PPE (respirator is the last item to be removed).	M
7. Inspect area of the Generator for fire and stay in the area for 30 minutes after cutting operations to ensure there is no potential for fire.	Failure to inspect could cause an uncontrolled fire to spread beyond work area.	Ensure worker has communication with other workers and that they can be notified if a fire starts.	M
8. Refueling Generator	Fire Spill	Allow cool down period before refueling. Refuel away from work area. Spill kit available	L

AHA # 14 Mercury Cleanup		
Equipment to be Used	**Training Requirements/Competent or Qualified Personnel Name(s)**	**Inspection Requirements**
Level C PPE, mercury vacuum, generator, 55gal steel drum, and hand tools	Specific training for mercury cleanups, mercury vacuum, and hand tools has been provided. Global employees have been respirator fit tested. Competent Person: Matthew Phelps	Inspect respirators, vacuum, generator, GFI plug, condition of 55 gal drums, and hand tools before each use following manufacturers' requirements. Discard or tag out-of-service, any equipment or tools that are damaged.

Abbreviations and Acronyms:

APP – Accident Prevention Plan
EHS – Environmental, Health, and Safety
MSDS – Material Safety Data Sheet
OSHA – Occupational Safety and Health Administration
SSHO – Site Safety and Health Officer
SS – Site Superintendent

AHA Signature Sheet

I have reviewed the above AHA and acknowledge the hazards involved with this work task and the controls that will help to minimize illness or injury during the tasks.

NAME	SIGNATURE	TITLE	DATE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

HEALTH AND SAFETY PLAN-GUIDANCE DOCUMENT

REMEDIATION HEALTH & SAFETY PLAN
Global Remediation Services Inc.

GENERAL INFORMATION AND ORGANIZATION STRUCTURE

SITE OWNER: Department of Navy/US Government
SITE CONTACT: **Matt Phelps-Global Remediation**

COMPANY CONTACTS: **Matt Phelps 617-447-4212**
Heather Atwood 617-592-6991
Steve Dennison 617-593-7535

SITE SAFETY: **Matt Phelps 617-447-4212**
ALTERNATE: **Steve Dennison 617-593-7535**

SITE LOCATION: **Former South Weymouth Naval Facility, South Weymouth, MA**

PLAN PREPARED BY: **Heather Atwood**

PLAN APPROVED BY:_____ **DATE:**_____

PLAN OBJECTIVES:

To provide safety and health policy and procedures for workers involved with the remedial activities for the removal of residual elemental mercury. Safety and Health information specific to the nature, level and degree of mercury exposure likely as a result of their hazardous materials activity are attached as part of the EPA Metallic Mercury Spill Response Guide. Global will be required to meet the requirements set forth in this plan. This plan will outline the use of controls, work practices and personal protective equipment to maintain exposures or potential exposures below permissible exposure limits.

HEALTH AND SAFETY PLAN-GUIDANCE DOCUMENT

WORKPLAN

WORK TASK REQUIREMENTS:

1) Global will mobilize manpower and equipment to the site including mercury vacuums with HEPA filter and MERCSORB absorbent powder.

2) Global will vacuum up accessible residual mercury/soil/concrete

3) The Mercury, PPE, vacuum filters, and other debris will be loaded into 55 gallons drums and sealed and labeled where they will remain until approval for off-site disposal.

1. *SITE AND WASTE CHARACTERISTICS*

A. HISTORY OF OPERATIONS: The site is a Former Military Naval Base owned by US Government

B. SITE HAZARDS EVALUATION: The following substances were detected at concentrations in the air and on exposure surfaces inside the home:

	Concentration	Substance	Medium
1.	*Elemental Mercury*	_____	
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____
7.	_____	_____	_____
8.	_____	_____	_____
9.	_____	_____	_____
10.	_____	_____	_____

These substances have the following health hazards:

Mercury is highly toxic and maybe irritating to skin, eyes, and other tissues. Mercury causes adverse health effects after chronic exposure. See attached MSDS.

Contingencies are established to account for potential emergencies such as:

1. Accidents or injuries
2. Signs or Symptoms of exposure
3. Discovery of uncharacterized hazardous materials
4. An emergency unrelated to this site work
5. Fire or explosion

D. CHEMICAL INFORMATION: (Identify all that apply)

☐ Ignitable
☐ Reactive
X Toxic
☐ Corrosive

1. Refer to Appendix A for MSDS of mercury

2. *SITE-SAFETY PROCEDURES*

A. SITE CONTROL MEASURES

Site control will be employed during all site work. No combustible material will be allowed in the area. No smoking or other spark or heat producing activities in the area of the generator. Only qualified and trained personnel will perform the mercury cleanup.

B. DESCRIPTION OF SITE ACCESSIBILITY:

Global will access the site through Tetra Tech escort.

C. WORK TASK SAFETY REQUIREMENTS:

Level "C" PPE will be utilized when exposure in expected during clean-up. Respirator cartridges will be changed out as needed.

HEALTH AND SAFETY PLAN-GUIDANCE DOCUMENT

D.SITE MONITORING INSTRUMENTATION TYPE AND APPLICATION:

E. SAFETY ORGANIZATION:

TEAM MEMBER	RESPONSIBILITY	QUALIFICATIONS
Matt Phelps	Health	OSHA 40/
Heather Atwood	Safety/Compliance	OSHA 40/Incident Commander

F. PERSONAL PROTECTION REQUIREMENTS:

1. *Conditions Requiring Change of Personal Protection Requirements: If concentrations of any chemical increase to workers must secure the area, remove themselves from the area, and notify the Safety Manager. In addition, due to the previous uses the possibility (does/does not) exist that unknown materials could be discovered. In this event workers have been* directed to remove themselves from the area and notify site safety for evaluation. The level of protection required will be determined after an assessment of the changing conditions has been made.

G. **DECONTAMINATION PROCEDURES:** The potential hazards at this site are high. In the event any contamination meets or exceeds hazardous waste characteristics as defined by 40 CFR 261.21 thru 24 it will be collected by trained personnel from an environmental consultant company. Appropriate notifications shall be made to the site owner and regulatory authority. If contamination is present, all tools and equipment must be decontaminated or disposed of after the completion of the work. Decontamination will take place away from the immediate work area but within the perimeter as identified by Tetra Tech. . Disposable PPE will be utilized on site and will be placed in drums with Mercury Debris

1. **Decontamination Equipment and Materials**
   To be assessed and obtained upon need.

H. DISPOSAL OF CONTAMINATED EQUIPMENT, SOLUTIONS, ETC.:
(Disposal of contaminated equipment and solutions shall be accomplished through a designated decontamination area located within the defined perimeter of the remediation operation. Liquids and solids will be separated, containerized, labeled and offered to the ***Client*** as specified.

I. CONFINED SPACE ENTRY N/A
The work site **(does not)** conform to the criteria set forth in 29 CFR 1910.146 for permitted or non-permitted confined space entry.

3. *EMERGENCY PROCEDURES*

A. FIRST AID INSTRUCTIONS: At first signs of over exposure, move the victim to fresh air and contact. In case of contact with material, flush area (skin or eyes) for 15 minutes. Wash skin with soap and water. Remove and isolate contaminated clothing and shoes at the site.

B. ACCIDENTS OR INJURIES
Any accidents or injuries to site personnel will be reported to **Matt Phelps and Tetra Tech.** A first aid kit is provided for administering basic care for an injury but is not adequate or appropriate for more serious injuries. Injured persons should be kept warm and calm until more experienced personnel arrive.

In the event a non-work related person is injured contact **Matt Phelps** and the employer of the injured party, if possible. Any accident or injury must be investigated before work can proceed.

C. HAZARDOUS MATERIAL RELEASE EMERGENCY RESPONSE
Individuals working in the remediation operation shall be prepared to evacuate the area in the event unlabeled containers are discovered, fires or explosions occur or the order to evacuate is given by Matt Phelps.

D. MEDICAL EMERGENCY RESPONSE
In the event of a medical emergency notify **Matt Phelps** who will contact local emergency medical services,

HEALTH AND SAFETY PLAN-GUIDANCE DOCUMENT

4. *ADDITIONAL EMERGENCY INFORMATION*

A. LOCAL RESOURCES:

Ambulance: ..... (911

South Shore Hospital: ..... (911

Poison Control Center: ..... (911

Police Department: ..... (911

Fire Department: ..... (911

Airport Authority: ..... (911

EHS 1-4, ATTACHMENT F

TETRA TECH EC, INC.

WASTE MANAGEMENT SUBCONTRACTOR REVIEW FORM

APPROVAL		
Approved: ☒	Conditionally Approved: ☐	Declined: ☐
PESM or Designee Signature: Jennifer Peters	Date: 1-13-15	
Manager, EHS Services Signature:	Date:	
Restrictions/Comments:	Veolia ES Port Washington, WI is approved to receive and dispose of mercury waste per their permit conditions. Approved to receive CERCLA waste. Veolia ES of 1 Eden Lane, Flanders, NJ (NJD 080 631 369) is also approved as a hazardous waste transporter.	

I. BACKGROUND INFORMATION:

Company Name:	Veolia ES Technical Solutions LLC 1275 Mineral Springs Drive Port Washington, WI 53074		
Contact One:	Kevin Shaver	Parent Company:	Same
Phone:	(262) 243-6900	EPA ID No (RCRA*):	WID 988 566 543
Contact Two:		EPA ID No (TSCA)	Same
Phone:	( )	USDOT ID No (s):	609181
Fax:	( )	Motor Carrier Safety No(s)/ ICC #:	MC-295758
Previous Name/Owners of Facility:	Formerly Onyx Environmental/AETS	** For Transporters, please provide EPA ID No. for each state in which you propose transport in or through or attach list.*	

II. TtEC PROJECT INFORMATION:

TtEC Contact:	Jennifer Peters	Project-Specific waste description/codes:	Mercury contaminated soil and debris from spill; and elemental mercury	
Project:	South Weymouth STP			
Project Manager:	Brian Corbett	Waste contains hazardous substance:	☒ Yes	☐ No
Charge Number:		Project is CERCLA site:	☒ Yes	☐ No
Project Location:	South Weymouth, MA			
TtEC Subcontract or Solicitation No:				

TETRA TECH EC, INC.

WASTE MANAGEMENT SUBCONTRACTOR REVIEW FORM

VII. STATE/REGIONAL/LOCAL REQUIREMENTS (Continued)

Agency/Department: _____ Date Contacted: _____

Contact and Title: _____ Most Recent Inspection Date: _____

Phone Number: ( )

Known Releases:

Enforcement Status/Comments:

VIII. TRANSPORTATION

Not Applicable: ☐

A. USDOT (www.safersys.org)

USDOT: www.safersys.org Date Contacted: 1-12-15

Contact and Title: Most Recent Inspection Date:

Phone Number: ( )

Insurance Verified and Up To Date: $5M BIPD required and on file. Cargo and bond not required, nor on file.

DOT Motor Carrier Rating: Authorized for hire, interstate, hazardous waste, satisfactory rating

Enforcement Status/Comments: 499 total inspections last 24 months.

1 Eden Lane, Flanders N.J. 552 power units and 387 drivers with 7,016,092 miles (2013).

Below national average for vehicle, driver, and hazmat OOS. No fatal crashes, but 4 injury and 5 tow crashes last 23 mo.

Not flagged for higher inspection priority.

B. STATE MOTOR CARRIER

Agency/Department: _____ Date Contacted: _____

Contact and Title: _____ Most Recent Inspection Date: _____

Phone Number: ( )

Insurance Verified and Up To Date

Motor Carrier Rating:

Enforcement Status/Comments:

C. DOT HAZARDOUS MATERIALS SECURITY REQUIREMENTS

Is carrier transporting any of the following HM? ☐ Yes* ☒ No

- A highway route-controlled quantity of a Class 7 (radioactive) material in a motor vehicle, rail car, or freight container;
- More than 25 kg (55 pounds) of a Division 1.1, 1.2, or 1.3 (explosive) material in a motor vehicle, rail car or freight container; -
- More than 1 liter (1.06 quart) per package of a material poisonous by inhalation, that meets the criteria for Hazard Zone A;
- **A shipment of a quantity of HM in a bulk package having a capacity equal to or greater than 3,500 gallons for liquids or gases, or more than 17.3 cubic yards for solids;**
- A shipment in non-bulk packaging of 5,000 pounds total gross weight or more of one class of HM for which placarding of a vehicle, rail car, or freight container is required;
- **A quantity of HM that requires placarding;** or
- A select agent or toxin regulated by the Centers for Disease Control and Prevention under 42 CFR Part 73.

*** If Yes, Carrier is required to have a HM Security Plan:**

☐ Carrier's HM Security Plan Table of Contents was reviewed & satisfactorily addresses the specific security risks associated with the HM being transported.

☐ Carrier's HM Security Plan Table of Contents was reviewed & does **NOT** adequately address the specific security risks associated with the HM being transported.

Comments: class 8 (not placarded) and class 9 hazardous material. No security plan required for this instance.

Is carrier transporting any of the following HM? ☐ Yes* ☒ No

- Radioactive materials - highway route controlled quantity of Class 7 materials.
- Explosives – more than 55 lbs. of a Division 1.1, 1.2 or 1.3 material or an amount of Division 1.5 requiring a placard.
- Toxic-by-inhalation – Division 2.3 and 6.1 – specific quantities per hazard zone.
- Liquefied natural gas – in bulk packages of capacity ≥ 3,500 gallons of liquid methane or natural gas; or other liquefied gas with ≥ 85% methane.

*** If Yes, Carrier is also required to have a HM Safety Permit:**

☐ Carrier's HM Safety Permit was reviewed & is complete and current.

☐ Carrier's HM Safety Permit was reviewed & is **NOT** complete/current.

☐ Carrier does **NOT** have a HM Safety Permit.

Comments:

IX. CERCLA OFF-SITE STATUS – Complete for all facilities		Not Applicable: ☐ (For transporters only)	
CERCLA Off-Site Coordinator:	William Damico, EPA Region V	Approved to Accept CERCLA waste?	☒ Yes ☐ No
Phone Number:	( )	Date of CERCLA Approval:	
Date Contacted:			
Comments:	Sent email to William on 1-12-15 requesting confirmation of CERCLA approval.		

RESPONSE ON 1-12-15: "Veolia ES Technical Solutions in Port Washington, WI (WID 988 566 543) is currently acceptable to receive waste regulated by the CERCLA Off-Site rule. This facility was inspected 4/1/14.

This facility seems like an unusual destination for mercury waste. I should remind you that the CERCLA Off-Site rule requires verifying facilities the waste is subsequently transferred to until the waste has been treated or disposed of. I think you need to verify either that Veolia does the mercury recovery or verify the status of the next facility that does the recovery."

Followed up by calling Steve at Port Washington facility. They do the retort at their facility and reclaim the mercury on-site.

X. TECHNOLOGY – Complete for all facilities			Not Applicable: ☐ (For transporters only)
Is Technology Review Required?	☐ Yes	☒ No	
If Yes, Is Technology Review Completed?	☐ Yes	☐ No	Date Completed:
Retort is technology. No review required.			

Global Remediation Services Inc.

700 Richmond Street
East Taunton, MA 02718
(508) 828-1005

Invoice

DATE	INVOICE #
3/10/2015	13090

BILL TO
Tetra Tech EC Attn: Accounts Payable 1000 The American Road Morris Plains, NJ 07950

P.O. NO.	TERMS	DUE DATE	REP
1112281	Net 30	4/9/2015	TB

ITEM	DESCRIPTION	QTY	RATE	AMOUNT
	Tuesday, January 13, 2015			
Field Service	Hazardous waste crew and equipment to vacuum up residual mercury & debris from contained area (includes Mercury vacuum and MercSorb)	1	3,750.00	3,750.00
	Wednesday, February 11, 2015			
Disposal	Retort of mercury debris	2	2,000.00	4,000.00
Disposal	Treatment of elemental mercury - D009	1	650.00	650.00
Materials	DOT pail w/cover for packing & shipping of elemental mercury	1	75.00	75.00
Trans	Transportation to licensed disposal facility	1	750.00	750.00
MHWTF-drum	MA Hazardous Waste Transportation Fee	2	15.68	31.36
MHWTF-pail	MA Hazardous Waste Transportation Fee	1	1.50	1.50
	site: former Naval Air Station South Weymouth, MA			
			Total	$9,257.86

Please Make Checks Payable to Global Remediation Services Inc.

700 Richmond Street
E. Taunton, MA 02718
PH: 508-828-1005

Daily Work Sheet

Day & Date: Tuesday 1/13/15
On-Site Time: 0745 - 1230

Client: Tetra Tech Engineering
Client Contact: Richard Clayden of Tetra Tech
Phone #: 617-443-7516
Site Contact:
Phone #
Job Location: South Weymouth Naval Base.

Job #:
Client PO #:

☐ T&M ☒ Contract ☐ Prevailing Wage

Start Time: 0630
Arrive At Site: 0745
Depart Site: 12:30
Arrive @ Shop or Next Job: 13:30

LABOR (OT: >8hrs, 3:30p-7:00a & SAT. DT: SUN & Holiday. ER=1.5x)

Name	Title	ST	OT	DT
Matt Phelps	Foreman	7		
Phil Borges	Field Tech	7		
	Field Tech			
	Field Tech			
	Field Tech			
	Equip Operator			
	Equip Operator			
	Truck Driver			

JOB DESCRIPTION

- Arrived onsite and performed Health & Safety Review with Tetra Tech.
- Set up work zone around the Mercury impacted area.
- Donned Level C PPE (chicken boots, yellow Tyvek, Inner Rubber Gloves, Chemical gloves, full face Respirator with combo cartridges).
- Used Mercury vacuum to vacuum residual Mercury/Soils.
- Tetra Tech Inspected this area and [redacted] inforced us that the area was good.
- Decontaminated Equipment and placed impacted debris in the 55gal drum.
- Impacted Soils/Mercury debris was placed in the onsite Drums.

JOB COMPLETE YES ☒ NO ☐

EQUIPMENT

Qty	Type	Fleet #	# Hours	D
	Pickup			
1	Utility Truck	R22	7	
	Vacuum Truck – 3K			
	Vacuum Trlr – 5K / 9K			
	Vactor			
	Box Truck w/lift gate			
	Dump Truck			
	Roll-off Truck / Trailer			
	Roll-off Can			
	Excavator			
	Backhoe / Loader			
	Bobcat w/			
1	Compressor / Generator			
	Spill Trailer			
	Pumps			
	CSE Equipment			
	Meters			
1	Mercury Vacuum			
1	MerSorb/HGX			

MATERIALS

Qty	Item	Qty	Item
	Speedi-Dry	2	PPE (Tyvek T
	Absorbent Pads	2	Chicken Boot
	Absorbent Boom	4	Gloves
	Poly (Rolls)		Level C ☒ Le
2	Poly Bags	2	Combo Cartr
2	17H Drums – RETURNED		Chemical Ca
1	5-gal Bucket	3	Paint Bru
1	Duct Tape		
	Caution Tape		
	Degreaser (5 gal)		

DISPOSAL:

Facility	Amount	Manifest #

ANALYSIS:

Qty	Type	Destination

SUBCONTRACTORS:

Name of Company	Description

CLIENT:
THE ABOVE ITEMIZED LABOR, EQUIPMENT AND MATERIALS ARE VERIFIED TO BE CORRECT:

By: RICHARD CLAYDEN (print) [signature] (sign)

Title: CIVIL ENGINEER Date: 1/13/2015

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST	1. Generator ID Number MA2170022022	2. Page 1 of 2	3. Emergency Response Phone 1-877-818-0087	4. Manifest Tracking Number 000787230 VES

GENERATOR

5. Generator's Name and Mailing Address
DEPT. OF NAVY/ US GOVT
1134 MAIN STREET, PO BOX 169
SOUTH WEYMOUTH, MA 02190
Generator's Phone: 617-753-4658

Generator's Site Address (if different than mailing address)

6. Transporter 1 Company Name: VEOLIA ES TECHNICAL SOLUTIONS, L.L.C. — U.S. EPA ID Number: NJD080631369

7. Transporter 2 Company Name: SJ Transportation Co Inc — U.S. EPA ID Number: NJD021629926

8. Designated Facility Name and Site Address
VEOLIA ES TECHNICAL SOLUTIONS, L.L.C.
1275 MINERAL SPRINGS DR.
PORT WASHINGTON, WI 53074
Facility's Phone: (262) 243-8900
U.S. EPA ID Number: WID988566543

9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers No.	10. Containers Type	11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
X	1 RQ UN2809, Waste Mercury, 8, PGIII	2	DM	1200	P	D009		
X	2 RQ UN2809, Waste Mercury, 8, PGIII	1	DM	0.5 ton	P	D009		
	3							
	4							

14. Special Handling Instructions and Additional Information
SO# 1002193 1) S51A2 2) 021H2 D3505273
1) 754784 MC-SO-RE MERCURY CONTAMINATED SOIL/DEBRIS (D009) ERG#172 2) 754785 MC-HGMGT ELEMENTAL MERCURY (D009) ERG#172 EMERGENCY RESPONSE # CONTRACTED BY VEOLIA

15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent.
I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.

Generator's/Offeror's Printed/Typed Name: DAVID BRAUN — Signature: [signature] — Month 12 Day 11 Year 15

INT'L

16. International Shipments ☐ Import to U.S. ☐ Export from U.S. Port of entry/exit:
Transporter signature (for exports only): Date leaving U.S.:

TRANSPORTER

17. Transporter Acknowledgment of Receipt of Materials

Transporter 1 Printed/Typed Name: TANIA HADDOCK — Signature: [signature] — Month 12 Day 11 Year 15

Transporter 2 Printed/Typed Name: MICHAEL ALKLEY — Signature: [signature] — Month 12 Day 16 Year 15

DESIGNATED FACILITY

18. Discrepancy

18a. Discrepancy Indication Space ☐ Quantity ☐ Type ☐ Residue ☐ Partial Rejection ☐ Full Rejection

Manifest Reference Number:

18b. Alternate Facility (or Generator) — U.S. EPA ID Number

Facility's Phone:

MAR 3 2015

18c. Signature of Alternate Facility (or Generator) — Month Day Year

19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)

1.	2.	3.	4.
H010	H010		

20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a

Printed/Typed Name: DAVID BRAUN — Signature: [signature] — Month 12 Day 25 Year 15

EPA Form 8700-22 (Rev. 3-05). Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

EW0811439
3508.74

VEOLIA

CERTIFICATE OF ACCEPTANCE FOR RECYCLING AND/OR DISPOSAL

By accepting the waste products described by the document number below on this certificate, Veolia ES Technical Solutions L.L.C. (Veolia ES) certifies to the generator that the transportation, storage or processing methods employed are in accordance with the Veolia ES permit parameters and all applicable federal, state and local laws.

BILL TO:	GENERATOR:
GLOBAL REMEDIATION SERVICES, INC. 700 RICHMOND STREET EAST TAUNTON, MA 02718	DEPT. OF NAVY/ US GOVT 1134 MAIN STREET, PO BOX 189 SOUTH WEYMOUTH, MA 02190

Product Code	Description	Qty	UOM
MC-SO-RE	Recycle/Retort - Mercury Contaminated Soil	407.0	P
MC-SO-RE	Recycle/Retort - Mercury Contaminated Soil	695.0	P
MC-HGMGT	Elemental Mercury Management	2.0	P

KEY: P = POUNDS, LFT = LINEAR FEET, LMP = LAMP, EA = EACH.
Questions regarding this certificate should be directed to customer service, toll free at 1-800-592-5297.

DOCUMENT #: DS005273
SALES ORDER #: 1002193
RECEIVED DATE: 2/25/15
PROCESSING FACILITY EPA ID: WID988568543
RETURN TRACKING#:
CUSTOMER MANIFEST:
STATE MANIFEST: 000787230VES
LINE NOTE:

PROCESSING FACILITY:
VEOLIA ES TECHNICAL SOLUTIONS, L.L.C.
1275 MINERAL SPRINGS DR.
PORT WASHINGTON, WI 53074

Under civil and criminal penalties of law for making or submission of false statements or representations (18 U.S.C 1001 and 15 U.S.C. 2615), I certify that the information contained in or accompanying this document is true, accurate and complete. As to the identified information in this document, for which I cannot personally verify truth and accuracy, I certify as the company official having supervisory responsibility for the persons who, acting under my direct instructions, made verification that this information is true, accurate and complete.

Kevin Shaver, Branch Manager
March 02, 2015